PHAR 7489
Integrated Pharmacotherapy 9: Critical Care and Clinical Toxicology
Spring Semester 2021

Course Description:

This required course shall serve as an introduction to critical care pharmacotherapy and clinical toxicology with specific emphasis given to toxidromes, acute patient management, and drug therapy as it relates to the critically ill.

Additional Course Information:

Comprehensive cases will be embedded into the course to ensure longitudinal recall of pharmacotherapy over the course of the didactic curriculum

Course Credit:
4 credit hours

Pre-requisites:
P3 Standing

Class Times:
TBD

Course Coordinator:
Justin Reinert, Pharm.D., BCCCP
WT Brookshire Hall, Room #370
(903) 566-6111
jreinert@uttyler.edu

Office Hours:
Monday's 12:00-2:00 p.m.
Wednesday's 12:00-2:00 p.m.
By appointment

Required Materials:
Course-required materials are either available through the Robert R. Muntz Library or will be made available as necessary on Canvas. Materials required from the American Heart Association will be provided by means of online videos, access to online modules, and workbooks for classroom use.

1. Casarett & Doull's Essentials of Toxicology (3rd edition). Curtis D. Klaassen and John B Watkins III. McGraw-Hill Education, ISBN 978-0-07-184708-7, 2015.

2. Pharmacotherapy: A pathophysiologic approach (10th edition). Joseph T. DiPiro, Robert L. Talbert, Gary C. Yee, Gary R. Matzke, Barbara G. Wells, L. Michael Posey. McGraw-Hill Education, ISBN 978-1-259-58748-1, 2017.

Course Format:

This course will include the following means of assessment and activities, in addition to others as needed/required by the instructor:

- Independent study of selected readings and pre-class presentations/lectures
- Individual readiness assessment tests (iRATs)
- Team-based learning activities
    - Team readiness assessment tests (tRATs)
    - Team application of content and concepts
    - Submission of team project

Course Assessment Methods

	Assessment method	**Description** *Please provide a brief description of each summative assessment that you plan to use in this course to allow us to identify which ACPE standards are being assessed*
1	Midterm and Final exams: multiple choice or multiple selection question(s)	Standard MCQ, T/F, matching, and select all that apply
2	Team project/Oral presentation	Historical Poisoning/Antidote Project

Course Learning Outcomes

CLOs	Related PLO(s)	EPAs	Assessment Methods	Grading Method	PPCP Skill(s) Assessed (1-5)	ACPE Std 11 & 12 (1-4)
1. Explain the basic premises of toxicology with regard to the characteristics of exposure and the types of tests performed to determine the toxic properties of a substance	1	1.1	1,3	ES	1	1
2. Demonstrate understanding of shock state management in critical illness utilizing pathophysiology, pharmacology, and therapeutic knowledge.	1,2,3,5,7,8	N/A	1,2,3,4	ES, RUB	1,2	1,2
3. Demonstrate understanding of medications utilized in critical illness by utilizing pathophysiology, pharmacology, and therapeutic knowledge.	1,2,3,5,7,8	N/A	1,2	ES, RUB	1,2	1,2
4. Develop plans for supportive care of critically ill patients, including sedation, analgesia and pain management, stress ulcer and DVT prophylaxis, nutrition support, and glucose control.	1,2,3,5,7,8	N/A	1,2	ES, RUB	1,2,3,5	1,2

5. Describe the ADME and biotransformative properties of select toxins	1	3.2	1,3	ES	1,2	1,2
6. Recognize and provide treatment rationale for the toxic responses of numerous organs and organ systems in response to exposure to select toxins	1,4	4.2	1,3	ES, RUB	3,4,5	2,3

Grading Policy & Grade Calculation:

Grades will be determined based on evaluation of individual and team readiness assessment tests (iRATs, tRATs), individual cumulative assessment tests (iCATs), final written examinations, graded application assignments, participation in team-based projects, and other assessment methods that may include, but are not limited to assignments and projects at the discretion of the course coordinator and instructors.

Examinations, RATs and CATs may consist of, but are not limited to: multiple choice, true/false, fill in the blank, short-answer, essay, and problem-based questions.

During the time the course in progress, students whose cumulative course percentage falls below 70.0% may receive an academic alert and be subject to periodic course content review in special sessions with the course instructor(s). The student's faculty advisor may receive an academic alert to act upon the student's behalf.

All examinations, tests, and assignments, including the final examination, may be cumulative. Students are responsible for material presented during the prior courses. The grading scale for all graded material is below. The final course grade will be assigned according to the calculated percentage and the percentages will not be rounded upward or downward. For additional information, see the examination/assessment policy below.

Standard Grade Calculation*	
Individual component	95%
iRATs/Other individual activities	10%
Major assessments (Midterms/Final exams) CAT 1 = 25% CAT 2 = 25% Final = 35%	85%
Team component	5%
tRATs	1%
Team application(s)/Team project(s)	1%
Longitudinal Poisoning Project	3%
Total	100%

The final course letter grade will be determined according to the following grading scheme:

A	90-100%
B	80-89.999%
C	70-79.999%
D	65-69.999%
F	<65%

Course Schedule – Spring 2021*

Week	Date	Topic	Instructor	CLO	Disease States
1	Day 1	Pharmacotherapy: FAST-HUG BID	Reine11rt	4	S18.6
	Day 2	Toxicology: Principles of Toxicology		1	S19.02
2	Day 1	Pharmacotherapy: Pain, Agitation, Sedation, and Delirium	Reinert	3	S18.11
	Day 2	Toxicology: Management of Opioid Toxicity		5,6	S05.06
3	Day 1	Fluid and Electrolyte Management	Reinert	3	S18.13
	Day 2	Toxicology: Management of TCA toxicity		5,6	S06.03
4	Day 1	DKA/HHS	Reinert	3,4	S07.02
	Day 2	Toxicology: Management of SGLT2 and Sulfonylurea toxicities		5,6	S07.01
5		COMPREHENSIVE CASE	Reinert		
6		EXAM 1			
7	Day 1	Categorization of Shock and Vasopressors	Reinert	2,3	S01.07
	Day 2	Toxicology: Management of Cocaine toxicity		5,6	S01.04
8	Day 1	Sepsis and Septic Shock	Reinert	2-4	S15.12
	Day 2	Toxicology: Management of Acetaminophen toxicity		5,6	S03.05
9		SPRING BREAK			
10	Day 1	Emergent Reversal of Anticoagulants and Antiplatelets	Reinert	5,6	S19.06
	Day 2	Management of alteplase toxicity		5,6	S01.09
11		COMPREHENSIVE CASE	Reinert		
12		EXAM 2			
13	Day 1	Status Epilepticus	Reinert	3	S05.04
	Day 2	Management of Neurologic toxicities		5,6	S19.02
14	Day 1	Traumatic Brain Injury and Central Fever	Reinert	3	S18.12
	Day 2	Management of Serotonergic toxicity		5,6	S19.02
15		FINAL EXAM			

*Class schedule is subject to change without prior notification

Longitudinal Team Project:

Each team will be responsible for selecting a famous /infamous person from history who was either killed or seriously injured from a toxin/poison, whether purposefully or inadvertently. The team will work together to create a 15-minute presentation on the toxidrome experienced by the historical figure, as well as providing an overview and relevant information about the toxin. Presentations will be recorded using Screencast-O-Matic™ and will be submitted prior to the final examination.

The free online recording software can be downloaded at: https://screencast-o-matic.com/screen-recorder

The longitudinal project will shall be uploaded to the appropriate location on Cavnas no later than the end of the 13th week of class. A specific date will be provided during the course introduction on the first day of class. Late submissions will not be accepted.